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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/606,636	06/25/2003	Michael A. Rothman	42P16428	5116

7590 02/21/2007

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EXAMINER	
FORD, GRANT M	
ART UNIT	PAPER NUMBER
2141	

SHORTENED STATUTORY PERIOD OF RESPONSE	MAIL DATE	DELIVERY MODE
3 MONTHS	02/21/2007	PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

If NO period for reply is specified above, the maximum statutory period will apply and will expire 6 MONTHS from the mailing date of this communication.

Office Action Summary	Application No.	Applicant(s)	
	10/606,636	ROTHMAN ET AL.	
	Examiner	Art Unit	
	Grant Ford	2141	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *25 June 2003*.

2a)☐ This action is **FINAL**. 2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1-15 and 27-30* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1-15 and 27-30* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☒ The drawing(s) filed on *05 April 2004* is/are: a)☒ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☒ Information Disclosure Statement(s) (PTO/SB/08) Paper No(s)/Mail Date *12-16-05, 9-6-05*.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____ .
5) ☐ Notice of Informal Patent Application
6) ☐ Other: _____.

DETAILED ACTION

Claim Rejections - 35 USC § 112

1. The following is a quotation of the second paragraph of 35 U.S.C. 112:

> The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

2. Claim 14 recites the limitation " said at least one RAID virtual storage volume ". There is insufficient antecedent basis for this limitation in the claim.

3. Claim 28 is rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention. Claim recites "..that may be run on...". The Examiner asserts that this phrase is indefinite and suggests changing to read "which are run on".

Claim Rejections - 35 USC § 102

4. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

> A person shall be entitled to a patent unless –
>
> (e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the

applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

5. Claims 1,3-4,10-15 are rejected under 35 U.S.C. 102(e) as being anticipated by Chilton (US 2002/0124134).

a. As per claim 1, Chilton discloses method for sharing resources across a plurality of computing platforms, comprising:

receiving a resource access request to access a shared resource at a first computing platform (Para. 0036);

determining a second computing platform via which the shared resource may be accessed (Para. 0036);

sending the resource access request to the second computing platform (Para. 0036);

accessing the shared resource via the second computing platform (Para. 0036).

b. As per claim 3, Chilton discloses wherein the method is performed in a manner that is transparent to operation systems running on the plurality of computing platforms (Para. 0038).

c. As per claim 4, Chilton discloses wherein the method is facilitated by firmware running on each of the plurality of computing platforms (Para. 0027).

d. As per claim 10, Chilton discloses maintaining global resource mapping data identifying which resources are accessible via which computing platforms (Para. 0035-0036); and

employing the global resource mapping data to determine which computing platform to use to access the shared resource (Para. 0035-0036, 0046).

e. As per claim 11, Chilton discloses wherein a local copy of the global resource mapping data is maintained on each of the plurality of computing platforms (Para. 0035-0036, 0046).

f. As per claim 12, Chilton discloses wherein the global resource mapping data is maintained by a central global resource manager (Para. 0032).

g. As per claim 13, Chilton discloses a method comprising:

configuring the plurality of storage devices as a virtual storage volume (Para. 0034-0036);

maintaining a global resource map that maps I/O blocks defined for the virtual storage volume to corresponding storage devices that actually host the I/O blocks (Para. 0034-0036);

receiving a data access request identifying an I/O block from which data are to be accessed via the virtual storage volume (Para. 0036);

identifying a computing platform via which a target storage device that actually hosts the I/O block may be accessed through the use of the global resource map (Para. 0035-0036);

routing the data access request to the computing platform that is identified (Para. 0036); and

accessing the I/O block on the target storage device via the computing platform that is identified (Para. 0036).

h. As per claim 14, Chilton discloses configuring the plurality of storage devices as at least one RAID storage volume (Para. 0041);

maintaining RAID configuration mapping information that maps I/O blocks defined for said at least one RAID virtual storage volume to corresponding storage devices that actually host the I/O blocks (Para. 0041); and

employing the RAID configuration mapping information to access appropriate storage devices in response to read and write access requests (Para. 0041).

i. As per claim 15, Chilton discloses wherein the RAID virtual storage volume is configured in accordance with the RAID-1 standard (Para. 0041). The Examiner notes that Chilton functions to operate in accordance with the RAID standard. As RAID-1 is merely a design choice within the RAID standard, Chilton functions to operate in accordance with RAID-1.

Claim Rejections - 35 USC § 103

6. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

7. This application currently names joint inventors. In considering patentability of the claims under 35 U.S.C. 103(a), the examiner presumes that the subject matter of the various claims was commonly owned at the time any inventions covered therein were made absent any evidence to the contrary. Applicant is advised of the obligation under 37 CFR 1.56 to point out the inventor and invention dates of each claim that was not commonly owned at the time a later invention was made in order for the examiner to consider the applicability of 35 U.S.C. 103(c) and potential 35 U.S.C. 102(e), (f) or (g) prior art under 35 U.S.C. 103(a).

8. Claim 2 is rejected under 35 U.S.C. 103(a) as being unpatentable over Chilton in view of Abbondanzio et al. (6,968,414) hereinafter referred to as Abbondanzio.

a. As per claim 2, Chilton discloses the invention substantially as claimed above. However, Chilton fails to explicitly teach the use of blade servers.

Abbondanzio teaches the use of blade servers in a blade server environment (Col 2 lines 3-26). It would have been obvious to one having ordinary skill in the art at the time the invention was made to incorporate the use of blade servers in distributed computing systems. One of ordinary skill in the art would have been motivated to do so for the purpose of permitting hot-swappable expansion of a server system (Col 1 lines 33-50).

9. Claims 5-9 are rejected under 35 U.S.C. 103(a) as being unpatentable over Chilton in view of Hemphill et al. (5,696,895), hereinafter referred to as Hemphill.

a. As per claim 5, Chilton discloses the invention substantially as claimed above. However, Chilton fails to explicitly teach wherein the resource access request is sent via an OOB communication channel.

Hemphill teaches wherein the resource access request is sent to the second computing platform via an out-of-band (OOB) communication channel (Figure 1 element 150). It would have been obvious to one having ordinary skill in the art at the time the invention was made to incorporate the use of an OOB communication channel with distributed server systems. One of ordinary skill in the art would have been motivated to do so for the purpose of providing monitoring and failed server recovery capabilities (Col 3 lines 31-48).

b. As per claim 6, Chilton discloses the invention substantially as claimed above. However, Chilton fails to explicitly teach wherein the resource access request is sent via an OOB communication channel.

Hemphill teaches wherein the OOB communication channel comprises one of a system management bus, an Ethernet-based network, or a serial communication link (Figure 1 element 150). It would have been obvious to one having ordinary skill in the art at the time the invention was made to incorporate the use of a serial OOB communication channel with distributed server systems. One of ordinary

skill in the art would have been motivated to do so for the purpose of providing monitoring and failed server recovery capabilities (Col 3 lines 31-48).

c. As per claim 7, Chilton discloses wherein the target resource comprises a storage device (Abstract, Para. 0022).

d. As per claim 8, Chilton discloses wherein the resource access request comprises a storage device write request (Para. 0010, 0026, 0036) and sending data corresponding to the storage device write request (Para. 0026, 0036). However, Chilton fails to explicitly teach wherein the resource access request is sent via an OOB communication channel.

Hemphill teaches wherein the resource access request is sent to the second computing platform via an out-of-band (OOB) communication channel (Figure 1 element 150). It would have been obvious to one having ordinary skill in the art at the time the invention was made to incorporate the use of an OOB communication channel with distributed server systems. One of ordinary skill in the art would have been motivated to do so for the purpose of providing monitoring and failed server recovery capabilities (Col 3 lines 31-48).

e. As per claim 9, Chilton discloses wherein the resource access request comprises a storage device read request (Para. 0010,0026,0036) and the method further comprises:

retrieving data corresponding to the read request from the shared resource (Para. 0036); and

sending the data that are retrieved back to the first computing platform (Para. 0036). However, Chilton fails to explicitly teach wherein the resource access request is sent via an OOB communication channel.

Hemphill teaches wherein the resource access request is sent to the second computing platform via an out-of-band (OOB) communication channel (Figure 1 element 150). It would have been obvious to one having ordinary skill in the art at the time the invention was made to incorporate the use of an OOB communication channel with distributed server systems. One of ordinary skill in the art would have been motivated to do so for the purpose of providing monitoring and failed server recovery capabilities (Col 3 lines 31-48).

Claim Rejections - 35 USC § 103

10. Claims 27-30 are rejected under 35 U.S.C. 103(a) as being unpatentable over Chilton and Abbondanzio in view of Hemphill.

a. As per claim 27, Chilton discloses receiving a resource access request from an operating system running on a requesting server to access a shared resource hosted by at least one of the plurality of servers (Para. 0036);

determining a target resource host from among the plurality of servers that host a target resource that may service the resource access request (Para. 0036);

sending the resource access request to the target resource host (Para. 0036); and

accessing the target resource via the target resource host to service the resource access request (Para. 0036). However, Chilton fails to explicitly teach the use of an OOB channel or the use of blade servers.

Abbondanzio teaches a chassis including a plurality of slots in which respective server blades may be inserted including an interface plane having a plurality of for mating with connectors on inserted server blades providing communication paths between the plurality of connectors (Figure 3, Col 2 lines 3-26); and a plurality of server blades including a processor and firmware to perform operations (Figure 3, Col 1 lines 33-50). It would have been obvious to one having ordinary skill in the art at the time the invention was made to incorporate the use of blade servers in distributed computing systems. One of ordinary skill in the art would have been motivated to do so for the purpose of permitting hot-swappable expansion of a server system (Col 1 lines 33-50).

Hemphill teaches the use of an out-of-band (OOB) communication channel (Figure 1 element 150). It would have been obvious to one having ordinary skill in the art at the time the invention was made to incorporate the use of an OOB communication channel with distributed server systems. One of ordinary skill in the art would have been motivated to do so for the purpose of providing monitoring and failed server recovery capabilities (Col 3 lines 31-48).

b. As per claim 28, Chilton discloses wherein the operations are performed in a manner that is transparent to operating systems that may be run on the plurality of server blades (Para. 0038).

c. As per claim 29, Hemphill teaches the use of an out-of-band (OOB) communication channel (Figure 1 element 150). It would have been obvious to one having ordinary skill in the art at the time the invention was made to incorporate the use of an OOB communication channel with distributed server systems. One of ordinary skill in the art would have been motivated to do so for the purpose of providing monitoring and failed server recovery capabilities (Col 3 lines 31-48).

d. As per claim 30, Chilton teaches a hidden execution mode (Para. 0036), as operations between ICDA units occur on a separate network from which requests are received. However, Chilton fails to explicitly disclose the use of an OOB communication channel.

Hemphill teaches the use of an out-of-band (OOB) communication channel (Figure 1 element 150). It would have been obvious to one having ordinary skill in the art at the time the invention was made to incorporate the use of an OOB communication channel with distributed server systems. One of ordinary skill in the art would have been motivated to do so for the purpose of providing monitoring and failed server recovery capabilities (Col 3 lines 31-48).

Conclusion

11. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Grant Ford whose telephone number is (571)272-8630. The examiner can normally be reached on 8-5:30 Mon-Thurs alternating Fridays.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Rupal Dharia can be reached on (571)272-3880. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

gmf

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SUPERVISORY PATENT EXAMINER